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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2003

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0708026F Productivity, Reliability, Availability,
Maintainability Program

PROJECT

2146

COST (\$ in Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
2146 PRAM	27,124	9,512	0	0	0	0	0	0	0	51,827
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

Note: Program funding was reduced after FY 2002 due to higher priority Air Force requirements.

(U) **A. Mission Description**

This program emphasizes the rapid incorporation of reliability and maintainability (R&M) technology 'fixes' that will improve the operational capability of weapon systems and equipment at a significantly lower cost. Productivity, Reliability, Availability, Maintainability (PRAM) accomplishes this by utilizing existing off-the-shelf and emerging technologies and adapting them to specific Air Force and joint-Service weapon systems and processes to solve near-term deficiencies. It relies on Major Command and field support to implement the adapted-technology when the initial investment is complete. PRAM is a key tool for reducing the total ownership cost of fielded systems and supporting infrastructure. Average project length is twenty-seven months. PRAM currently provides services to all three Air Force Materiel Command centers: Aeronautical Systems Center; Electronic Systems Center; and Air Armament Center; as well as all Air Logistics Centers. PRAM also provides service to the Air Force Space Command Space and Missile Systems Center. Note: In FY 2003, Congress added \$2.8M for Modeling/ Re-engineering for Oklahoma City Air Logistics Center and \$2.1M for Aircraft Turbine Engine Sustainment.

(U) **FY 2002 (\$ in Thousands)**

- (U) \$0 Accomplishments/Planned Program
- (U) \$2,552 Completed the existing PRAM projects that are designed to reduce total ownership cost of Air Force aging aircraft such as: overcoming parts obsolescence in test equipment for electronic warfare systems; prototyping coatings and lubricants to prevent corrosion on support equipment and electrical terminals; and developing life support equipment and more efficient means of publishing technical data.
- (U) \$9,905 Continued airframe, subsystem, and space R&M efforts that reduce the overall maintenance burden, improve capabilities and reliability, and improve mission readiness. These efforts will be focused on reducing overall Air Force operations and support (O&S) costs.
- (U) \$4,389 Continued existing aging aircraft efforts to reduce overall Air Force O&S costs and increase aircraft availability, reliability, while maintaining operational capability and reducing mobility footprint.
- (U) \$2,139 Continued the existing efforts to address reduced O&S costs within the air armaments enterprise. Continued development of a non-destructive test protocol that duplicates actual flight conditions for precision-guided munitions and cruise missiles.
- (U) \$2,178 Developed and completed efforts associated with Inspection Technology for Turbine Engines such as the development of an automated

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(U) **A. Mission Description Continued**

(U) **FY 2002 (\$ in Thousands) Continued**

ultrasonic inspection system to detect embedded flaws in turbine engine components.

(U) \$2,000 Develop and implement Engine Blade Tip Repair Technology.

(U) \$3,961 Developed and completed efforts associated with Automated Non-destructive Inspection Technology for Turbine Engine Sustainment such as the development of probability of detection reliability specimens to validate automated ultrasonic inspection system performance.

(U) \$27,124 Total

(U) **FY 2003 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Program

(U) \$1,774 Complete previous year subsystem Productivity, Reliability, Availability and Maintainability (PRAM) projects to reduce total ownership costs of Air Force systems such as: combining the attributes of three types of support equipment; transitioning commercial-off-the-shelf equipment to the F-16 aircraft; developing a powder coating technique that is applicable to various systems; and transitioning new materials that present an improved strength-to-weight ratio resulting in greater payloads for both space and aircraft missions.

(U) \$1,311 Continue airframe, subsystem, life support, and space reliability and maintainability (R&M) efforts that reduce operations and support (O&S) costs by reducing the overall maintenance burden, improving capabilities, reliability, and mission readiness.

(U) \$870 Continue existing aero support equipment efforts to reduce Air Force O&S costs. Expand the current base infrastructure R&M tracking method for contingency data associated with system usage/configuration, premature failures, cost, and supply. Continue development of improved efficiency air compressor.

(U) \$862 Complete the existing space and missile systems reliability efforts to reduce Air Force O&S costs within the air armaments enterprise. Complete development of a non-destructive test protocol that duplicates actual flight conditions for precision-guided munitions and cruise missiles. Transition technology to improve R&M of munitions handling systems.

(U) \$2,012 Develop and complete Aircraft Turbine Engine Sustainment.

(U) \$2,683 Develop and complete efforts associated with Modeling/Re-engineering for Oklahoma City Air Logistics Center.

(U) \$9,512 Total

(U) **FY 2004 (\$ in Thousands)**

(U) \$0 Accomplishments/Planned Program

(U) \$0 No Activity

(U) \$0 Total

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(U) **B. Budget Activity Justification**

This program is in Budget Activity 7, Operational System Development, because it provides support to systems in operational use.

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Total Cost</u>
(U) Previous President's Budget	26,623	4,767	7,409	
(U) Appropriated Value	26,889	9,667		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-266	-102		
b. Small Business Innovative Research	-910			
c. Omnibus or Other Above Threshold Reprogram	2,000	-53		
d. Below Threshold Reprogram	-457			
e. Rescissions	-132			
(U) Adjustments to Budget Years Since FY 2003 PBR			-7,409	
(U) Current Budget Submit/FY 2004 PBR	27,124	9,512	0	51,827

(U) **Significant Program Changes:**

Program funding was reduced due to higher priority Air Force requirements.

(U) **D. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E										
(U) Other APPN										
(U) Related Activities:										
(U) PE 0605011F, RDT&E for Aging Aircraft.										

(U) **E. Acquisition Strategy**

All projects within this Program Element are awarded competitively, either by full and open competition, or by amending task order contracts with competition for subcontracts.

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(U) F. Schedule Profile

	<u>FY 2002</u>				<u>FY 2003</u>				<u>FY 2004</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Blade Repair Contract Award			X									
(U) Request For Proposal Release		*	X			X						
(U) Contract Awards	*	*	*		X	X	X					
* = completed, X = planned												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2003	
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development				0708026F Productivity, Reliability, Availability, Maintainability Program				2146	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>									
				FY 2002		FY 2003		FY 2004	
(U) Subsystem Reliability and Maintainability (R&M)				2,552		1,774			
(U) Airframe R&M				9,905		1,311			
(U) Aero Support Equipment and Base Infrastructure R&M				4,389		870			
(U) Space and Missile Systems Reliability				2,139		862			
(U) Blade Tip Repair Project (reprogrammed from PE 0207601F)				2,000		0			
(U) Non-destructive Inspection Technology for Engine Sustainment				3,961		0			
(U) Inspection Technology for Turbine Engine				2,178		0			
(U) Aircraft Turbine Engine Sustainment				0		2,012			
(U) Modeling/Re-Engineering for Oklahoma City Air Logistics Ctr				0		2,683			
(U) Total				27,124		9,512			
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>									
(U) <u>Performing Organizations:</u>									
<u>Contractor or Government</u>		<u>Contract Method/Type</u>		<u>Award or Obligation</u>		<u>Performing Activity</u>		<u>Project Office</u>	
<u>Performing Activity</u>		<u>or Funding Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>	
<u>Product Development Organizations</u>									
Numerous		Various		Various		N/A		N/A	
General Atomics		Various		Various		N/A		N/A	
Lockheed Martin		Various		Various		N/A		N/A	
ARINC		T&M		Feb 01		N/A		N/A	
Battelle		T&M		Feb 01		N/A		N/A	
Lockheed Sanders		T&M		Mar 01		N/A		N/A	
Southwest Research		T&M		Various		N/A		N/A	
CACI		T&M		TBD		N/A		N/A	
NCI Information Systems		T&M		Various		N/A		N/A	

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(U) <u>Performing Organizations Continued:</u>										
<u>Product Development Organizations</u>										
Survival Equipment Inc.		TBD	TBD	N/A	N/A	0	450	300	0	750
SAIC		TBD		N/A	N/A	0	277	448	0	725
<u>Support and Management Organizations</u>										
UDRI		TDB	Various	N/A	N/A	0	0	2,800		2,800
In-house support										
<u>Test and Evaluation Organizations</u>										
(U) <u>Government Furnished Property:</u>										
		<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>										
None										
<u>Support and Management Property</u>										
None										
<u>Test and Evaluation Property</u>										
None										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>					<u>to FY 2002</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development					15,191	27,124	6,712		0	49,027
Subtotal Support and Management					0	0	2,800			2,800
Subtotal Test and Evaluation										
Total Project					15,191	27,124	9,512		0	51,827
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